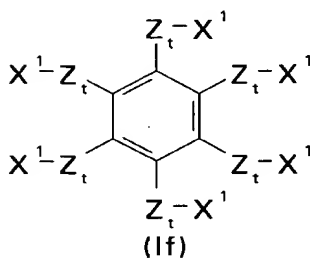
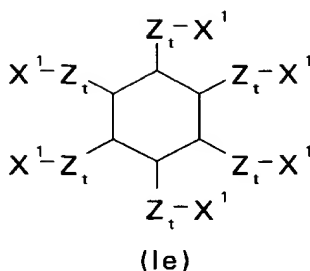
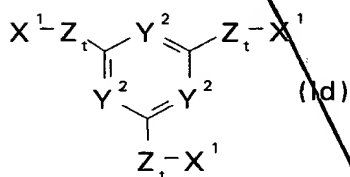
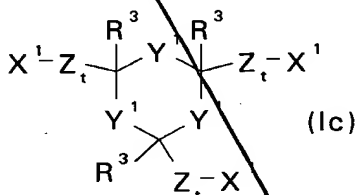
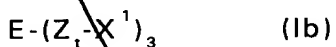
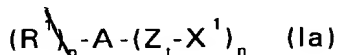


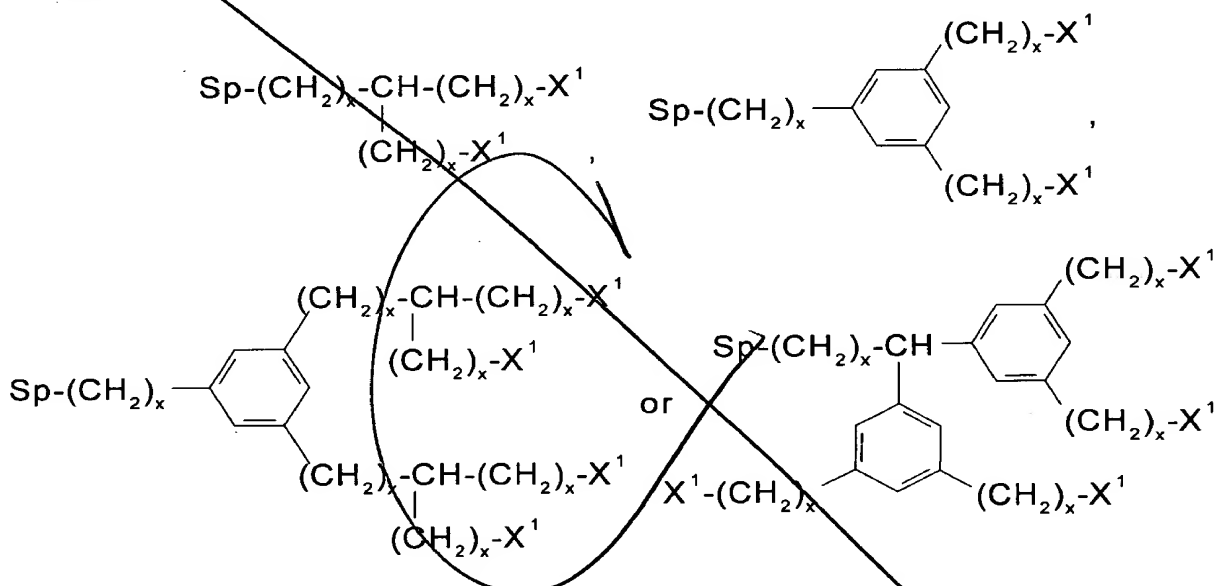
U.S.S.N. 09/067,337
KOSTER *et al.*
PRELIMINARY AMENDMENT



wherein: A is carbon or silicon; E is nitrogen or P(O); R¹ and R³ are each independently hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclalkyl; p is 0 or 1; Z is any combination of 1-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene units, which units may be combined in any order, with the proviso that if the LPC is of formula (Ia) or (Ib), then Z contains at least two phenylene or methylene units; t is 1; X¹ is any reactive group which can be used in biopolymer synthesis; n is 3 or 4; Y¹ is CH₂, NH, S or O; Y² is selected from CH and N; R¹, R³, X¹, Y¹, Y² and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy,

aryloxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylaryl amino, alkylcarbonylamino, alkoxycarbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyano, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl.

8. (Amended) A liquid phase carrier (LPC), wherein the LPC has any of formulae:



wherein: Sp is a polyvalent group that has more than two points of attachment, X^1 is a reactive group for synthesis of biopolymers, and x is 0-6.

27. (Amended) A liquid phase carrier (LPC), wherein the LPC has formula $\text{Sp}(\text{O}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}_2)_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}_2)_n$, $\text{Sp}(\text{O}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}-\text{C}(\text{O})-(\text{CH}_2)_x-\text{COOH})_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}-\text{C}(\text{O})-(\text{CH}_2)_x-\text{COOH})_n$, $\text{Sp}(\text{NH}-\text{C}(\text{O})-(\text{CH}_2)_x-\text{COOH})_n$, $\text{Sp}(\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}_2)_n$, $\text{Sp}(\text{C}(\text{O})-\text{NH}-(\text{CH}_2)_x-\text{NH}-\text{C}(\text{O})-(\text{CH}_2)_x-\text{COOH})_n$, $\text{Sp}(\text{O}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{O}-(\text{CH}_2)_x-\text{OH})_n$, $\text{Sp}(\text{O}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{O}-(\text{CH}_2)_x-\text{SH})_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{O}-(\text{CH}_2)_x-\text{OH})_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{O}-(\text{CH}_2)_x-\text{SH})_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{S}-(\text{CH}_2)_x-\text{OH})_n$, $\text{Sp}(\text{S}-(\text{CH}_2)_2-\text{C}(\text{O})-\text{S}-(\text{CH}_2)_x-\text{SH})_n$.

U.S.S.N. 09/067,337
KOSTER et al.
PRELIMINARY AMENDMENT

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~~(CH₂)_x-SH)_n, Sp(O-(CH₂)₂-C(O)-S-(CH₂)_x-OH)_n, Sp(O-(CH₂)₂-C(O)-S-(CH₂)_x-SH)_n,
Sp(NH-C(O)-(CH₂)_x-CO-O-(CH₂)_x-OH)_n, Sp(NH-C(O)-(CH₂)_x-CO-O-(CH₂)_x-SH)_n,
Sp(NH-C(O)-(CH₂)_x-CO-S-(CH₂)_x-OH)_n, Sp(NH-C(O)-(CH₂)_x-CO-S-(CH₂)_x-SH)_n,
Sp(C(O)-O-(CH₂)_x-OH)_n, Sp(C(O)-S-(CH₂)_x-OH)_n, Sp(C(O)-O-(CH₂)_x-SH)_n or
Sp(C(O)-S-(CH₂)_x-SH)_n where x is 0-6, Sp is a polyvalent group that has more
than two points of attachment, and n is the number of points of attachment.~~

29. (Amended) The LPC of claim 5 that is coupled to a photocleavable linker.

30. (Amended) The LPC of claim 27 selected from the group consisting of Sp(O-(CH₂)₂-C(O)-NH-(CH₂)_x-NH-C(O)-(CH₂)_x-COOH)_n, Sp(S-(CH₂)₂-C(O)-NH-(CH₂)_x-NH-C(O)-(CH₂)_x-COOH)_n, Sp(NH-C(O)-(CH₂)_x-COOH)_n and Sp(C(O)-NH-(CH₂)_x-NH-C(O)-(CH₂)_x-COOH)_n, where x is 0-6.

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31. (Amended) A liquid phase carrier (LPC), selected from the group consisting of tetrakis(8-amino-6-aza-2-oxa-5-oxooctyl)methane, tetrakis(11-carboxy-6,9-diaza-5,10-dioxo-2-oxaundecyl)methane, tris(3-aza-6-carboxy-4-oxohexyl)amine, 1,3,5-benzenetricarboxylic acid tris-N-(2-aminoethyl)amide, 1,3,5-benzenetricarboxylic acid tris-N-(3-aza-6-carboxy-4-oxohexyl)amide, tetrakis{6,9-diaza-13-[5'-O-(4,4'-dimethoxytriphenylmethyl)-2'-deoxythymidine-3'-O-yl]-2-oxa-5,10,13-trioxotridecyl}methane ((DMT-dT)₄-PE-LPC), 1,3,5-tris{2,5-diaza-9-[5'-O-(4,4'-dimethoxytriphenyl-methyl)-2'-deoxythymidine-3'-O-yl]-1,6,9-trioxononyl}-benzene ((DMT-dT)₃-Aryl-LPC), tetrakis[13-(2'-deoxythymidin-3'-O-yl)-6,9-diaza-2-oxa-5,10,13-trioxotridecyl]-methane (dT₄-PE-LPC), 1,3,5-tris[9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl]-benzene (dT₃-Aryl-LPC), tris-{3-aza-4,7-dioxo-7-[5'-O-(4,4'-dimethoxytriphenylmethyl)-2'-deoxythymidine-3'-O-yl]-heptyl}-amine ((DMT-dT)₃-Amine-LPC) and tris[3-aza-7-(2'-deoxythymidine-3'-O-yl)-4,7-dioxoheptyl]-amine (dT₃-Amine-LPC).

32. (Amended) The LPC of claim 31 selected from the group consisting of tetrakis(11-carboxy-6,9-diaza-5,10-dioxo-2-oxaundecyl)methane,

U.S.S.N. 09/067,337
KOSTER et al.
PRELIMINARY AMENDMENT

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tris(3-aza-6-carboxy-4-oxohexyl)amine, 1,3,5-benzenetricarboxylic acid tris-N-(3-aza-6-carboxy-4-oxohexyl)amide, tetrakis{6,9-diaza-13-[5'-O-(4,4'-dimethoxytriphenylmethyl)-2'-deoxythymidine-3'-O-yl]-2-oxa-5,10,13-trioxotridecyl}methane ((DMT-dT)₄-PE-LPC), 1,3,5-tris{2,5-diaza-9-[5'-O-(4,4'-dimethoxytriphenyl-methyl)-2'-deoxythymidine-3'-O-yl]-1,6,9-trioxononyl}-benzene ((DMT-dT)₃-Aryl-LPC), tetrakis[13-(2'-deoxythymidin-3'-O-yl)-6,9-diaza-2-oxa-5,10,13-trioxotridecyl]-methane (dT₄-PE-LPC), 1,3,5-tris[9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl]-benzene (dT₃-Aryl-LPC), tris-{3-aza-4,7-dioxo-7-[5'-O-(4,4'-dimethoxytriphenylmethyl)-2'-deoxythymidine-3'-O-yl]-heptyl}-amine ((DMT-dT)₃-Amine-LPC) and tris[3-aza-7-(2'-deoxythymidine-3'-O-yl)-4,7-dioxoheptyl]-amine (dT₃-Amine-LPC).

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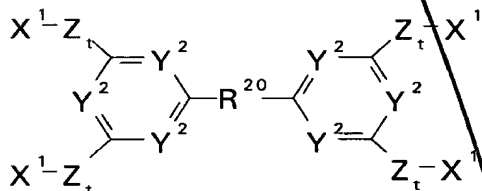
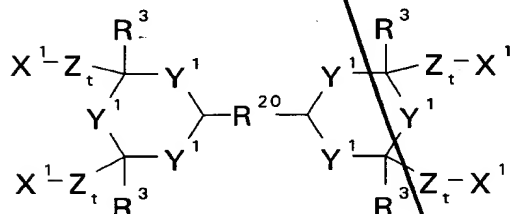
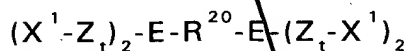
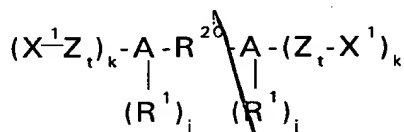
43. (Amended) The LPC of claim 32 selected from the group consisting of tetrakis[13-(2'-deoxythymidin-3'-O-yl)-6,9-diaza-2-oxa-5,10,13-trioxotridecyl]-methane (dT₄-PE-LPC), 1,3,5-tris[9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl]-benzene (dT₃-Aryl-LPC), and tris[3-aza-7-(2'-deoxythymidine-3'-O-yl)-4,7-dioxoheptyl]-amine (dT₃-Amine-LPC).

44. (Amended) The LPC of claim 43 that is 1,3,5-tris[9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl]-benzene (dT₃-Aryl-LPC).

45. (Amended) A liquid phase carrier (LPC) that has formulae:

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U.S.S.N. 09/067,337
KOSTER et al.
PRELIMINARY AMENDMENT



wherein: A is carbon or silicon; E is nitrogen or P(O); R¹ and R³ are each independently hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl; Z is any combination of 1-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order, with the proviso that if the LPC is of formula (Ia) or (Ib), then Z contains at least two phenylene or methylene units; t is 0 or 1; X¹ is any reactive group which can be used in biopolymer synthesis; Y¹ is CH₂, NH, S or O; Y² is selected from CH and N; R¹, R³, X¹, Y¹, Y² and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonyl-alkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl,